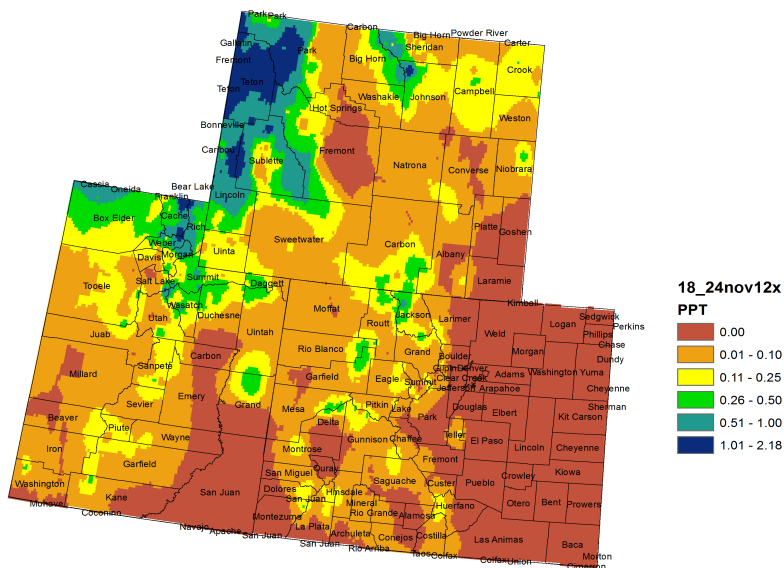


NIDIS Weekly Climate, Water and Drought Assessment Summary

Upper Colorado River Basin

November 27, 2012

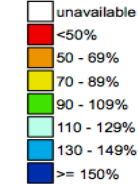
Colorado, Utah and Wyoming 7 Day Precipitation (in)
18 - 24 November 2012



Westwide SNOTEL Current Snow Water Equivalent (SWE) % of Normal

Nov 26, 2012

Current Snow Water
Equivalent (SWE)
Basin-wide Percent
of 1971-2000 Normal



* Data unavailable
at time of posting
or measurement
is not representative
at this time of year

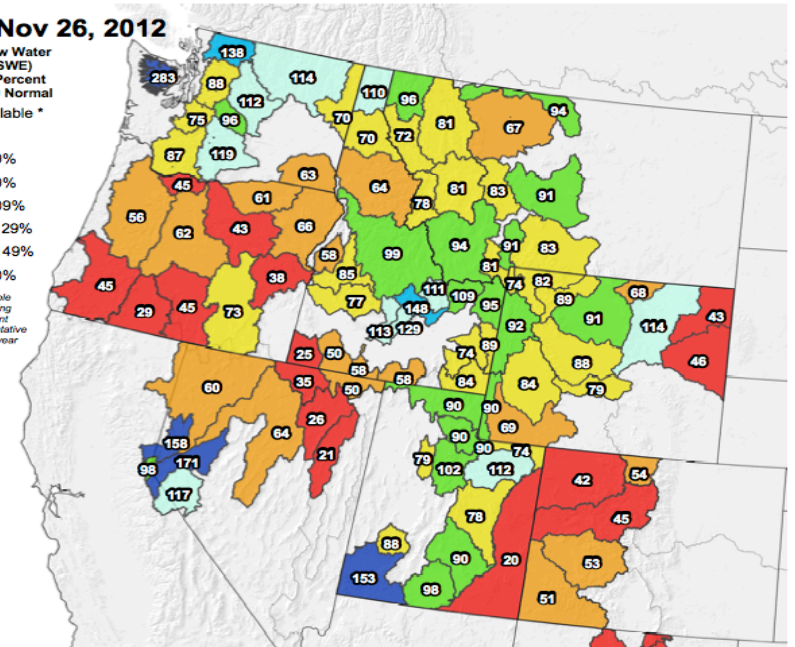


Fig. 1: November 18 – 24 precipitation in inches.

Fig. 2: Basin-averaged snow water equivalent as a percent of average, as of November 26th.

Precipitation

Since the beginning of November, most of the higher elevations of the Upper Colorado River Basin (UCRB) have received over half an inch of moisture. The San Juans in southwest Colorado, and the Wasatch and Uintah ranges in Utah have received between one and four inches since the beginning of the month, while the northern CO mountains have seen between .50 and 2 inches. Last week, a few isolated areas in the UCRB received between .25 and 1 inch of precipitation (Fig. 1). Most of the rest of the basin, including the northern CO mountains and the southern part of the basin, received less than .25 inches of moisture for the week. Eastern CO was dry last week.

Accumulated snowpack is currently less than average on the east side of the UCRB and near average on the west side of the basin (Fig. 2). Sub-basins in western CO and along the Colorado River valley in eastern UT are all near or below 50% of average snowpack. Northeast UT and southwest WY basins are around 80% to 100% of average snowpack. SNOTEL precipitation for the water year is between the 30th and 50th percentiles for most of northeast UT and southwest WY, with many percentiles in the teens and single digits throughout western CO.

Streamflow

As of November 25th, about 23% of the USGS streamgages in the UCRB recorded normal (25th – 75th percentile) to above normal 7-day average streamflows (Fig. 3). About 41% percent of the gages in the basin are recording much below normal or low (i.e. lowest on record) streamflows, and only four gages recorded above normal flows. Much below normal flows are concentrated around the Colorado River in CO, around the Gunnison headwaters, and along the Upper San Juan River. The best conditions (near normal) are concentrated around the Upper Green River. It is important to note that with baseflows dominating during this time of year, small changes in flows can lead to large percentile changes.

Flows on the three key gages around the basin were variable last week (Fig. 4). Flows on the Colorado River near the CO-UT state line stayed near steady at the 7th percentile. Flows on the Green River at Green River, UT increased over the past week to the 13th percentile, the below normal range. Flows on the San Juan River near Bluff, UT decreased from the below normal range to the much below normal range (6th percentile).

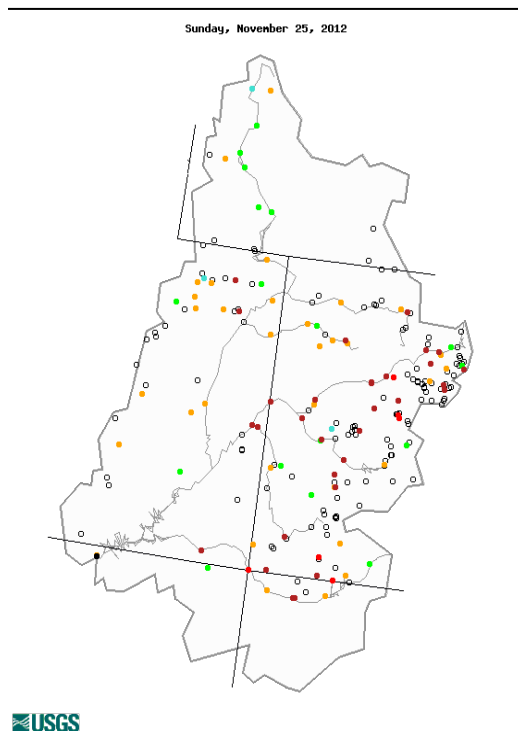
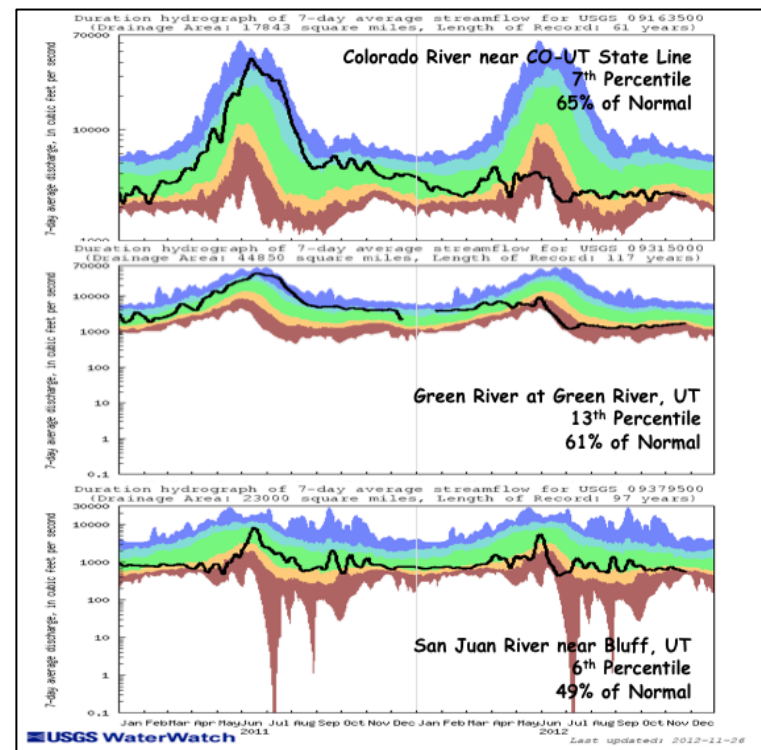


Fig. 3: 7-day average discharge compared to historical discharge for November 25th.

Fig. 4: USGS 7-day average discharge over time at the CO-UT stateline (top), Green River, UT (middle) and Bluff, UT (bottom).



Water Supply and Demand

Last week most of the UCRB experienced warmer than average temperatures. Temperatures ranged from 3 to 12 degrees above average. East of the UCRB, the rest of CO also experienced above average temperatures, ranging from 6 to 12 degrees warmer than average. The VIC soil moisture model shows extremely dry soils through most of WY, with soil dryness below the 20th percentile in northeast UT and northwest CO (Fig. 5). Improvements in soil moisture have shown up over northern UT and western WY. When modeled soil moisture is combined with snowpack (Fig. 5) northwest CO shows dryness below the 5th percentile, while northeast UT shows dryness below the 10th percentile. Dry soils also show up in southeast CO with near normal soil moisture in north-central CO and in the San Luis Valley in southern CO.

Most of the major reservoirs in the basin are between 60% and 85% of their November averages. Blue Mesa is the lowest, at 55% of its average November storage volume, and Flaming Gorge is the highest, at 99% of average. Lake Powell and Dillon have seen larger decreases for the month (greater than 2% volume decreases). Flaming Gorge, McPhee, and Blue Mesa Reservoirs have seen very minimal changes this month, and Lake Granby's volume has increased slightly since the beginning of the month. Lake Powell is currently at 69% of its November average and 55% of capacity.

Precipitation Forecast

The UCRB will remain underneath a stubborn ridge of high pressure throughout much of the week, with above average temperatures and little in the way of precipitation. A few weak impulses shedding off a large trough over the eastern Pacific will attempt to make their way inland toward the end of the week, but are expected to fall apart as they encounter the big ridge over the western U.S. The strongest of these appears to pass through Friday and may lead to some light snow shower activity over extreme northern portions of the basin in the Uintah, Wind River and Park ranges (Fig. 6). Attention then turns to the next system anticipated to approach the area sometime early next week. Uncertainty remains high this far out in the forecast, however if this current feature holds together, it will bring a more widespread precipitation event to the UCRB. The best chance of appreciable precipitation will again favor the far northern and western parts of the basin while southern portions should remain mostly dry.

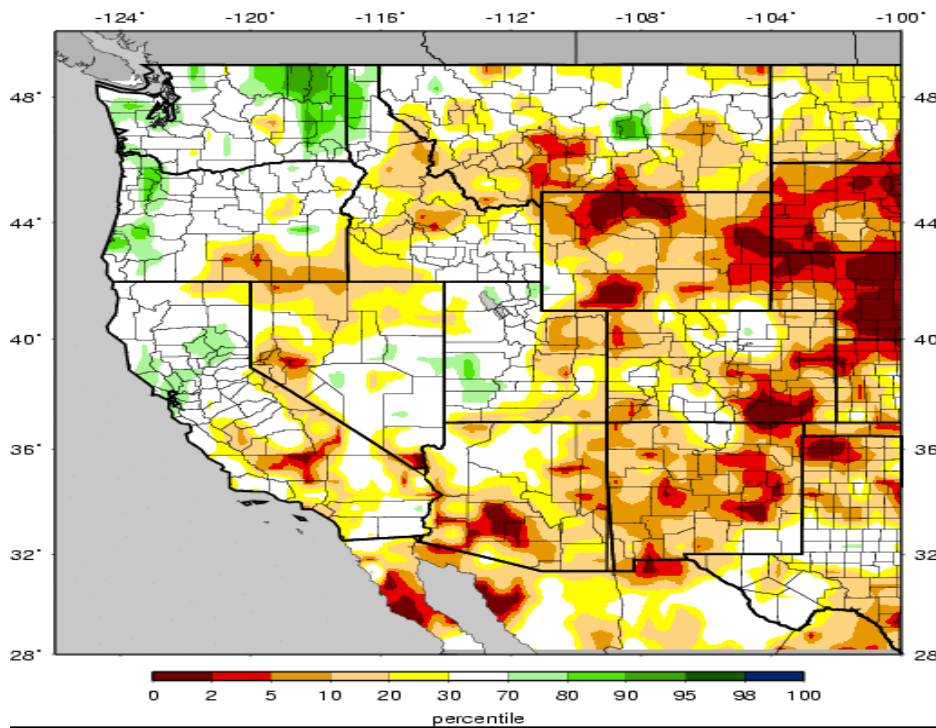


Fig. 5: VIC modeled soil moisture percentiles for the western U.S. as of November 25th. The map below combines soil moisture and SWE.

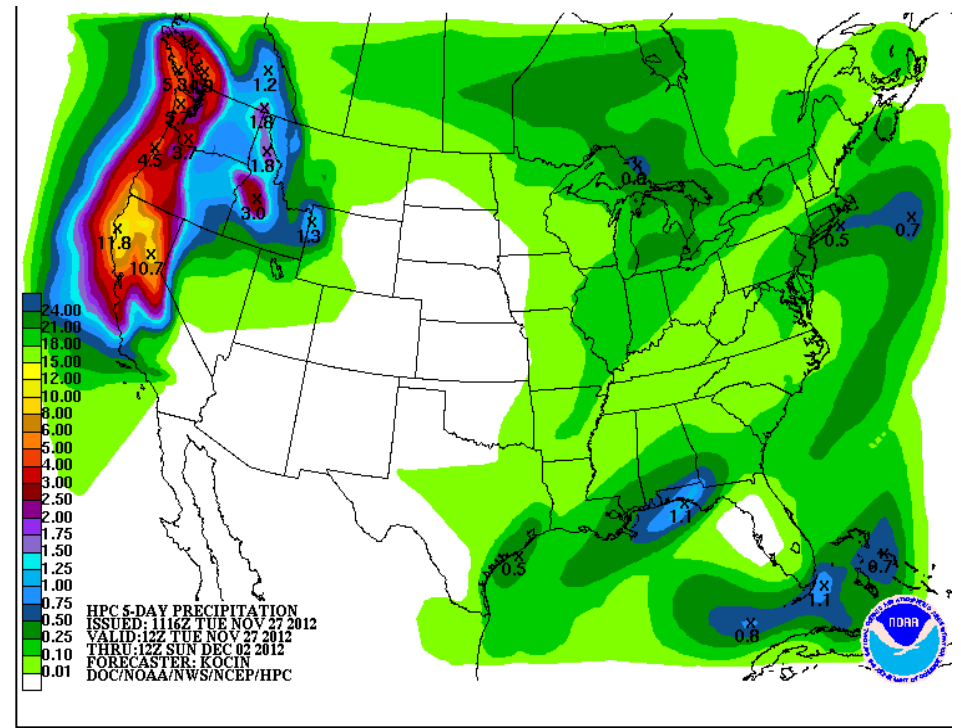
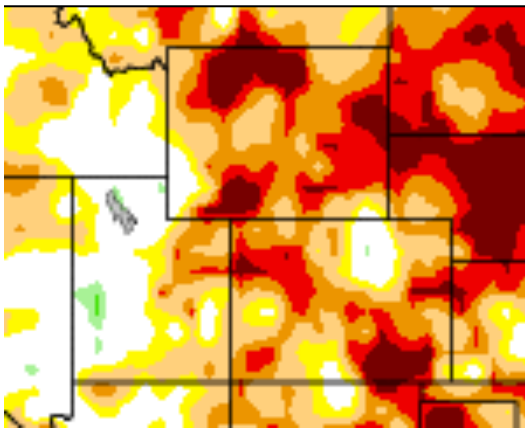


Fig. 6: Quantitative precipitation forecast (QPF) by the Hydrologic Prediction Center out to 12UTC Saturday.

Drought and Water Discussion

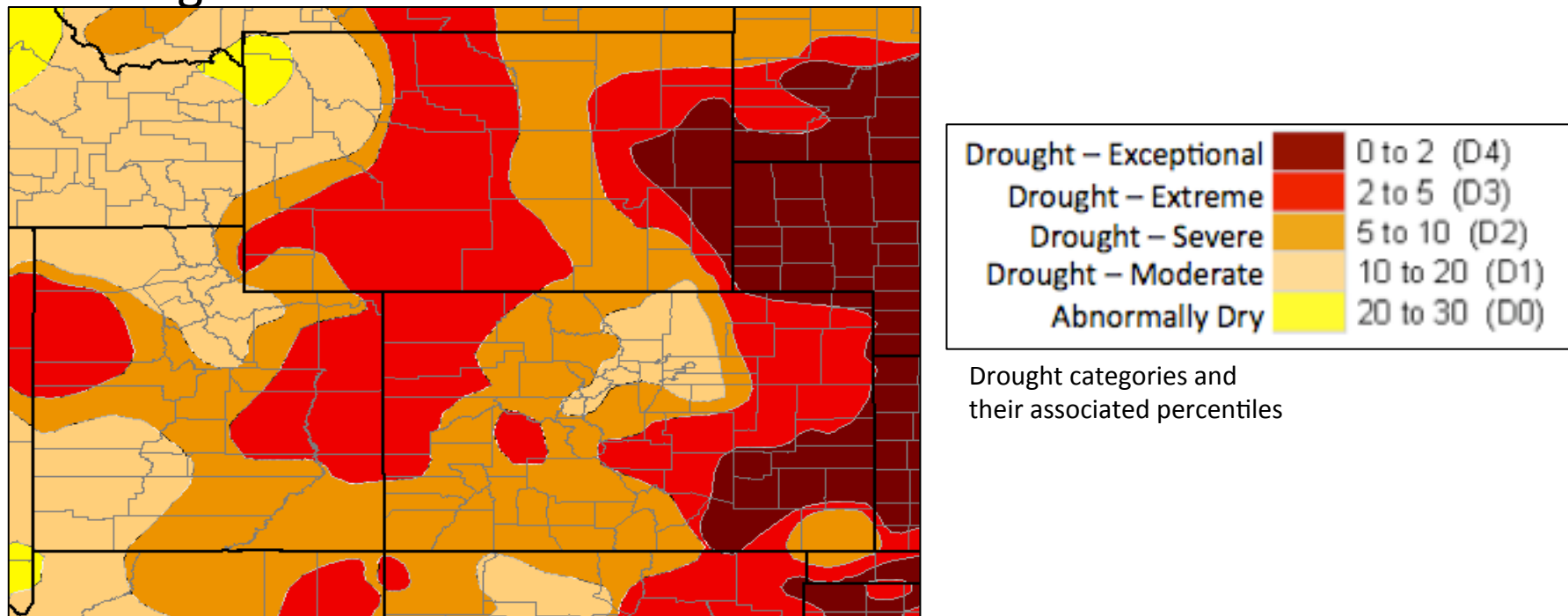


Fig. 7: November 20th release of U.S. Drought Monitor for the UCRB.

UCRB: In the most recent draft of the U.S. Drought Monitor (USDM) map, the D3 was expanded to cover more of Routt County in northwest CO (Fig. 7). Additionally, D2 was expanded to cover Lake County and along the Continental Divide in Summit, Clear Creek, and Grand counties. This area is suffering from low snowpack, warmer than average temperatures, long-term drought conditions, and SNOTEL precipitation percentiles along the Continental Divide are in the single digits. Some local experts feel that, in spite of the snowpack deficits, it may be too early in the winter season to introduce further degradations as the deficit could still be made up from just a couple of storms, so no additional changes; status quo is recommended for the rest of the UCRB.

Eastern CO: No precipitation fell last week and the region has seen less than average precipitation this month. However, grasses are dormant and no impacts are being reported, so no deteriorations are needed at this time. Status quo is recommended for eastern CO.